

WHAT IS CLAIMED IS:

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- 5 1. A semiconductor device comprising:
an interconnect layer arranged above a surface of a substrate on which a functional semiconductor region is formed;
an inter layer dielectric covering a surface of said interconnect layer, and
a silicon nitride film formed so as to cover a whole surface of said inter layer dielectric;
- 10 a metal interconnect layer as an uppermost metal layer formed as an upper layer of said silicon nitride film, said metal interconnect layer being consisted of gold material; and
a planarized dielectric formed on said metal interconnect layer.
- 15 2. A semiconductor device according to claim 1, wherein said planarized dielectric is consisted of polyimide.
- 20 3. A semiconductor device according to claim 2, wherein said silicon nitride film is formed by high-density plasma CVD method.
4. A semiconductor device according to claim 1, wherein polyimide resin layer is removed at a part of region of said metal interconnect layer and bonding wire is connected to said region in said metal interconnect layer.

- 25 5. A method for manufacturing a semiconductor device comprising steps of:
a process for forming a foundation interconnect layer on a surface of a semiconductor substrate on which a functional semiconductor region is formed;

a process for forming an inter layer dielectric on said foundation interconnect layer of which surface is shaped as convex and concave shape;

a process for forming silicon nitride film on said inter layer dielectric;

5 a process for forming metal interconnect layer as an uppermost layer interconnectas an upper layer of said silicon nitride film, said metal interconnect layer being consisted of gold; and

a process for coating a polyimide resin film on said metal interconnect layer and planarizing surface thereof.

10 6. A method for manufacturing a semiconductor device according to claim 5, wherein said metal interconnect layer is connected to said foundation interconnect layer through a though hole formed in-between thereof and furhter wherein said interconnect layer is low in resistance and formed thicker than thickness of said foundation interconnect layer.

15 7. A method for manufacturing a semiconductor device according to claim 6, wherein said method further includes a process for removing a part of region of said polyimide resin layer, and a process for wire-bonding at said part of region so as to connect to a surface of said metal interconnect layer.